REMARKS

At the time of the last Office Action, the application contained claims 1-9 and 21 of which claim 1 was the sole independent claim.

In the last Office Action, all of the claims were non-finally rejected as follows:

1. Claims 1-3 and 21 were rejected as obvious under 35 USC §103(a) over RAVENSCROFT (5,702,418), in view of FRANTZEN (6,168,618);
2. Claims 5 and 9 were rejected as obvious under 35 U.S.C. §103(a) over RAVENSCROFT and FRANTZEN, and further in view of HAYASHI et al. (6,607,539); and
3. Claims 6-8 were rejected as obvious under 35 USC §103(a) over RAVENSCROFT in view of FRANTZEN, and further in view of BARRY et al. (6,277,126).

Applicants with to thank Examiner Sarah Webb for the courteous interview with applicants' undersigned counsel at the Patent and Trademark Office on December 13, 2006.

As discussed during the interview, the present invention is directed to a self expanding stent 20 having anchor members 52 adjacent its ends, and the stent is on a core wire 14. In the present invention, releaseable retaining rings 19 and 21 extend around the stent at the anchor members so as to compress the stent and the anchor members into gap 42 between the cylindrical members 16 and 18 to retain the stent on the core wire 14. Because of the presence of the retaining rings at the anchor members, it is possible in the present invention to selectively release the distal anchor members 52 as shown in FIG. 5, by first releasing the distal retaining ring 21. If it is discovered that the stent has been deployed at an incorrect location, the distal anchor members can be retracted simply by withdrawal of the deployed distal anchor members back into the outer catheter 3 to retract the distal anchor members into their original non-deployed position in the catheter 3. This permits the stent to be repositioned to the correct position in the vessel. This is possible because the proximal anchor members 52 have been retained in the gap 42 between the tubular members 16 and 18 by the proximal retaining ring 19 which has not yet been released. Thus, the proximal anchor members 52 continue to hold the stent in place and prevent it from movement during the retraction and repositioning procedure. When repositioned, the catheter 3 is again withdrawn in the proximal

direction so that the distal anchor members 52 and distal end of the stent will again redeploy as shown in FIG. 5.

When the stent has finally been deployed in its desired location in the vessel 58, the proximal retaining ring 19 is released as shown in FIG. 6 to permit the stent to fully expand, and the catheter, released retaining rings 19 and 21 and core wire are removed as shown in FIG. 7.

RAVENSCROFT discloses a stent delivery catheter that includes an elongated core member 14 with proximal and distal cylindrical rings 23 on the core member 17 to define a gap therebetween as best seen in FIGS. 2 and 3. Upon distal displacement of the rings 23, the distal face of the proximal ring engages the proximal surface of the overlapping twisted portion 20b of a self expanding stent 20 which is in the gap between the cylindrical rings 23 to urge distal displacement of the stent 20. Conversely, upon proximal displacement of the rings 23, the proximal face of the distal ring engages the distal surface of the overlapping twisted portion 20b of the stent which is in the gap between the cylindrical rings 23 to urge proximal displacement of the stent 20. The position has been taken by the Examiner that the twisted portions 20b constitute an anchor member as claimed. However, RAVENSCROFT fails to disclose or suggest any actuatable retaining rings as in the present claimed invention to hold the self expanding stent 20 in its compressed condition and in the gap between the rings 23 once it has moved out of the sheath 24. The newly cited FRANTZEN has been relied upon for this aspect of the claimed invention.

FRANTZEN discloses a coiled stent 10 having binding straps 30 encircling the stent spaced longitudinally at several points along the length of the stent to compress the stent including adjacent the proximal and distal ends of the stent. In FRANTZEN, the binding straps 30 are electrolytically eroded so that they rupture sequentially to selectively control the expansion of the stent. The principal purposes of FRANTZEN in its use of the binding straps 30 is to minimize the risk for cocking or displacement of the stent during deployment (col. 1, lines 50-52) and to eliminate the exterior sheath of a delivery system to reduce the thickness of the delivery system (col. 1, lines 53-59 and col. 2, lines 1-4). Once the binding straps 30 have been ruptured, the severed straps which are coupled to the catheter 21 may be removed with the catheter (col. 5, lines 48-50).

FRANTZEN contains no disclosure or suggestion whatsoever of recapture and redeployment of a stent, or that its binding straps cooperate in any manner with anchor members on a stent. For that matter FRANTZEN fails to disclose anchor members on the stent at all. Moreover, it is the express purpose of FRANTZEN to eliminate the exterior sheath around the stent which is necessary to perform the recapture and redeployment purpose of either the present invention or RAVENSCROFT. The purpose of the binding straps of FRANTZEN is entirely different than the recapture and redeployment purpose of either RAVENSCROFT or the present invention. Moreover, the avoidance of cocking of the stent during deployment which is the other purpose of the binding straps of FRANTZEN is unnecessary in either RAVENSCROFT or the present invention because both of the latter have the exterior sheath which permits sequential deployment of the stent without cocking. Accordingly, the modification of RAVENSCROFT by FRANTZEN is impermissible hindsight after having had the benefit of the disclosure of the present invention.

And, even if RAVENSCROFT was modified to include the binding straps of FRANTZEN, there is absolutely no disclosure or suggestion whatsoever in either of where to place the binding straps in RAVENSCROFT. Indeed, there are any one of four possible choices of where to place the straps. Those choices are whether to place them:

(1) over the rings 23;

(2) in the gap between the rings and over the twisted portion 20b in that gap;

(3) over the proximal portion of the stent as seen in Fig. 2 and proximal to the proximal ring 23; or

(4) over the distal portion of the stent as seen in Fig. 2 and distal to the distal ring 23.

Indeed, if one skilled in the art desires to place the binding straps of FRANTZEN in RAVENSCROFT, that person would likely place them not in the gap, choice (2) above, but around the proximal and/or distal portions of the stent in order to maximize control of the expansion of the stent, i.e., choices (3) and/or (4) above.

In contrast, claim 1 specifically calls for the retaining rings to be disposed around the outer cylindrical surface of the stent at an anchor member which is in a compressed state <u>in the gap between the proximal and distal cylindrical members</u>. It is respectfully submitted that if

RAVENSCROFT could be modified to include the binding straps of FRANTZEN, neither RAVENSCROFT nor FRANTZEN contain any direction or suggestion of where to place them between the four choices available. Only one of the four choices, choice (2) above, might meet the placement in the gap claimed in claim 1. None of the other three choices would meet the limitation in claim 1 that the retaining ring of the claimed invention is at the anchor member which is compressed in the gap between the claimed proximal and distal cylindrical members. In fact as mentioned above, it is most likely that the retaining rings would be placed at the proximal and/or distal ends of the RAVENSCROFT stent, i.e., choices (3) and/or (4) for better control of the stent expansion, and those ends are not in but beyond the RAVENSCROFT gap.

In addition, claim 1 has been amended herein to set forth that the self-expanding stent has a proximal end which is distal to the proximal cylindrical member, that the anchor member is at the proximal end of the stent, and that the anchor member at the proximal end of the stent is interlocked within the gap between the proximal cylindrical member and the distal cylindrical member. As discussed during the interview, RAVENSCROFT contains no disclosure or suggestion whatsoever that the proximal end of its stent should be distal to the proximal cylindrical member and that the proximal end of the stent is that which is positioned within the gap between the proximal and distal cylindrical members. Indeed, RAVENSCROFT clearly discloses in Figs. 1-5 that the proximal end 58 of its stent is proximal and not distal to its proximal cylindrical member contrary to claim 1 as presently amended. This placement is important in the present invention because by positioning the proximal anchor member 52 at the proximal end of the stent and distal to the proximal cylindrical member 16, a much more secure lock of the stent is realized between the cylindrical members during placement and repositioning of the stent in the patient's blood vessel. Moreover, because the stent in the present claimed invention does not extend over the proximal cylindrical member as it does in RAVENSCROFT, the overall system may be smaller in diameter because the inner wall of the sheath 24 need not be measurably larger than the outer diameter of the cylindrical members to accommodate the passage of the stent materials therebetween. This is particularly important in the intended use and purpose of the present invention in the very small blood vessels within the brain. See for example, paragraphs 0003 and 0029 of the present specification.

Contrary to the statement made in the last Office Action, it would not be an obvious matter of design choice to place the twisted portions 20 b which are shown at the ends of the RAVENSCROFT stent and beyond the cylindrical members and particularly the proximal cylindrical member, into the gap between the cylindrical members. There is no disclosure or suggestion in RAVENSCROFT to do that. To a person skilled in the art, any such placement would be hindsight after having had the benefit of applicants' disclosure. In contrast, the placement of the proximal anchor member at the end of the stent as applicants have done will result in the advantages previously stated at the end of the last paragraph, i.e. reduction in diameter of the delivery system and a more secure locking of the stent during placement. Neither of these goals are mentioned by RAVENSCROFT.

For the above reasons, claim 1 and its dependent claims should be clearly in condition for allowance.

Moreover, new dependent claims 22-27 have also been added which are believed to be clearly in condition for allowance in their own right.

New dependent claim 22 sets forth that the actuatable retaining ring is disposed around said anchor member at said proximal end of said stent, and claim 23 sets forth two actuatable rings, the second of which is disposed around said anchor member at said proximal end of the stent. As previously discussed, even when RAVENSCROFT is modified by the teachings of FRANTZEN, there is still an absence of suggestion or direction of where to put the retaining rings of FRANTZEN in RAVENSCROFT. Also, as previously discussed, there is any one of four choices, only one of which might meet the claim limitations.

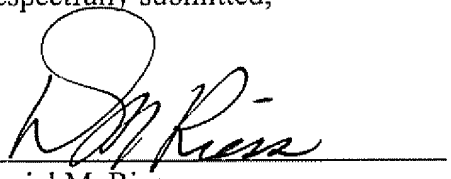
New dependent claim 24 sets forth that at least one of the proximal and distal cylindrical members comprise a helical coil, and dependent claim 25 sets forth that both comprise a helical coil. This subject matter is clearly disclosed in paragraph 0030 of the present specification and is not disclosed or suggested by any of the prior art of record which has been relied upon to reject the claims.

Finally, new dependent claim 26 sets forth that the anchor member comprises a coil on the interconnected strap members at the end of the stent and dependent claim 27 sets forth that the coil is

radiopaque. This subject matter is clearly set forth in paragraph 0033 of the specification and is not disclosed or suggested by any of the prior art currently of record to reject the claims.

For the above reasons, it is respectfully submitted that all of the claims remaining in the present application, claims 1-9 and 21-27, are in condition for allowance. Accordingly, favorable reconsideration and allowance are requested.

Respectfully submitted,

Dated: 12/28/06 By: 

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